UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/032,147	12/31/2001	Chae Deok Lim	P67531US0	3553

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EXAMINER
KANG, INSUN

ART UNIT	PAPER NUMBER
2124	

DATE MAILED: 03/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	10/032,147	LIM ET AL.
	Examiner	Art Unit	
	Insun Kang	2124	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12/31/01, 3/14/02, 3/25/02, 1/13/04*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *31 December 2001* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☒ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date *3/25/02, 1/13/04*.

4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____ .

DETAILED ACTION

1. This action is responding to application papers dated 12/31/2001, 3/14/2002,

3/25/2002, and 1/13/2004.

2. Claims 1-10 are pending in the application.

Drawings

3.   Figure 1 should be designated by a legend such as --Prior Art-- because only

that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in

compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid

abandonment of the application. The replacement sheet(s) should be labeled

"Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct

any portion of the drawing figures. If the changes are not accepted by the examiner, the

applicant will be notified and informed of any required corrective action in the next Office

action. The objection to the drawings will not be held in abeyance.

4.   The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5)

because they include the following reference character(s) not mentioned in the

description: 112, 114, 122, and 124 in Fig. 1, 100 in Fig. 7, S122 and S134 in Fig 8.

Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the

specification to add the reference character(s) in the description in compliance with 37

CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the

application. Any amended replacement drawing sheet should include all of the figures

appearing on the immediate prior version of the sheet, even if only one figure is being

amended. Each drawing sheet submitted after the filing date of an application must be

labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37

CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be

notified and informed of any required corrective action in the next Office action. The

objection to the drawings will not be held in abeyance.

Specification

5.   The disclosure is objected to because of the following informalities: there

appears to be a minor typographical error in the abstract, page 25, line 4. The article 'a'

needs to be corrected to "an." Also, there appears to be a minor error in spacing

between words in line 14.   Appropriate correction is required.

6.   Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:
(1) if a machine or apparatus, its organization and operation;
(2) if an article, its method of making;
(3) if a chemical compound, its identity and use;
(4) if a mixture, its ingredients;
(5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

The abstract refers to purported merits or speculative applications of the invention in

lines 10-16. Appropriate correction is required.

7.   Applicant is reminded of the proper language and format for an abstract of the
disclosure.

The abstract should be in narrative form and generally limited to a single
paragraph on a separate sheet within the range of 50 to 150 words. It is important that
the abstract not exceed 150 words in length since the space provided for the abstract
on the computer tape used by the printer is limited. The form and legal phraseology
often used in patent claims, such as "means" and "said," should be avoided. The
abstract should describe the disclosure sufficiently to assist readers in deciding whether
there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information
given in the title. It should avoid using phrases which can be implied, such as, "The
disclosure concerns," "The disclosure defined by this invention," "The disclosure
describes," etc.

The abstract repeats information given in the title and uses a phrase, which can be

implied: "is disclosed" in lines 3-4. Appropriate correction is required.

Claim Objections

8.   Claims 5-10 are objected to because of the following informalities: Per claim 7,

"the new generated symbol" needs to be corrected to "the newly generated symbol."

Per claims 5 and 10, it appears that "is" is missing in the phrase of "a symbol defined."

As per claims 6-9, these claims are objected for dependency on the above objected

parent claim 5. Appropriate correction is required.

Claim Rejections - 35 USC § 112

9.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10.   Claims 1-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Per claim 1, it is unclear to which object file in line 6 it is referring. It is interpreted as "the cross-compiled object file."

Claim 2 recites the limitation "the object file" in line 19. There is insufficient antecedent basis for this limitation in the claim.

Claim 2 recites the limitation "the object file" in line 24. There is insufficient antecedent basis for this limitation in the claim.

Per claim 4, it is unclear to which object files in lines 7 and 10 they are referring. They are interpreted as "the cross-compiled object file."

Per claim 4, it is unclear to which target modules files in line 7 they are referring. It is interpreted as "the loaded target modules."

Per claim 5, it is unclear to which object file in lines 26 and 27 they are referring. They are interpreted as "the object files."

Per claim 5, it is unclear to which rearranged object file in the last line it is referring. It is interpreted as "the rearranged object file."

Claim 6 recites the limitation "the cross-compiled object file" in line 7. There is insufficient antecedent basis for this limitation in the claim.

Per claim 7, it is unclear to which symbol in line 20 it is referring. It is interpreted as "the new symbol."

Per claim 8, it is unclear to which undefined symbol to defined symbol process in line 25 it is referring. It is interpreted as "the undefined symbol." Same applies for "an undefined symbol" in line 27.

Per claim 8, it is unclear to which defined symbol in line 27, symbol, symbol table in line 28, target memory, and rearrangement they are referring. They are interpreted as "the defined symbol," "the symbol," and "the symbol table," "the target memory," and "the rearrangement."

Per claim 9, it is unclear to which rearranged symbol in line 8, rearrangement, target memory inline 11, symbol in line 11, and rearrangement information in line 13 they are referring. They are interpreted as "the rearranged symbol," "the rearrangement," "the target memory," "the symbol," and "the rearrangement information."

Per claim 10, it is unclear to which object file in lines 4 and 5, rearrangement, symbol in line 4 and 6, defined symbol inline 6, rearranged object file in line 7, and target memory in line 7 they are referring. They are interpreted as "the object files" "the symbol," "the rearranged object file," "the target memory."

Claim Rejections - 35 USC § 101

11.   35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or

> composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

12.   Claims 1-4 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 1-4 are non-statutory because they are directed to an "incremental remote loading apparatus" comprising a "dependent reader module and independent linker module." Although the independent claim starts out reciting an "apparatus," the apparatus does not have structural elements and the apparatus comprises only modules that are disembodied arrangements so as to be called a "computer program" or compilation of facts, information, or data *per se*, without creating any functional interrelationship, either as part of the stored data or as part of the computing processes performed by the apparatus ("acts") or computer readable medium so as to enable the apparatus to perform the claimed instructions for "receiving a cross-compiled object file, rearranging target modules," etc as recited. With no other structure in the independent claim to rely on, the alleged "apparatus" of the independent claim turns out to be non-statutory for being a computer program per se. Thus the claims represent non-functional descriptive material that is not capable of producing a useful result, and hence represent only abstract ideas. Therefore, the claims are non-statutory.

Claim Rejections - 35 USC § 102

13.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

14. Claims 1-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Quong et al. ("Linking programs Incrementally," ACM, 1991) hereinafter referred to as "Quong."

Per claim 5:

Quong discloses:

a) at a reader module, analyzing necessary linking information for liking object files (i.e. Inclink handles ensuing link requests by incrementally updating the executable," page 4, 4. Inclink);

b) at a linker, allocating a target memory space for sections according to a section information (i.e. "Inclink stores all segment, symbol, and relocation information in a use dependency graph,"; page 5. 4.1 Internal Representation) determining whether each entry of a symbol table is defined or not and calculating addresses of sections in a target memory (i.e. "When handling a symbol definition, we first check the undefined list. Inclink allows undefined symbols as long as they are not referenced," page 6, 4.3 Relinking); d) determining, according to a result of said step c), whether a symbol defined or not In case said symbol is stored in said symbol table or inserting a new symbol to the symbol table in case the symbol is not in said symbol table and determining whether the new symbol is defined or not (i.e. "When handling a symbol definition, we first check the undefined list. Inclink allows undefined symbols as long as they are not referenced," page 6, 4.3 Relinking); e) rearranging an object file if a symbol is defined or rearranging the object file after transforming a defined symbol in case the

symbol is not defined; and f) transmitting a rearranged object file to a target memory ("Relocate all references from S to other symbols...Rewrite the dirty segments into the executable," page 6, 4.3 Relinking) as claimed.

Per claim 6:

The rejection of claim 5 is incorporated, and further, Quong teaches:

-a1) determining a type of the cross-compiled object file; a2) analyzing the linking information by connecting a COFF reader in case said object file type is a COFF type; and a3) analyzing the linking information by connecting an ELF reader in case said object file type is an ELF type (page 5, 4.1 Internal Representation) as claimed.

Per claim 7:

The rejection of claim 5 is incorporated, and further, Quong teaches:

-d1) generating a new symbol if an entry is not stored in said symbol table and is not a defined symbol; d2) adding symbol information including a symbol name and an address of a target memory to the new generated symbol; and d3) registering and inserting the symbol, which is generated and the symbol information added, to the symbol table (i.e. "When handling a symbol definition, we first check the undefined list. Inclink allows undefined symbols as long as they are not referenced," page 6, 4.3 Relinking ; "Relocate all references from S to other symbols...Rewrite the dirty segments into the executable," page 6, 4.3 Relinking) as claimed.

Per claim 8:

The rejection of claim 5 is incorporated, and further, Quong teaches:

- e) includes the steps of: e1) transforming an undefined symbol to an defined symbol if a symbol in a symbol table is undefined; and e2) adding an address of a target memory and rearranging modules of a target system by using a rearrangement information of said undefined symbol (i.e. "When handling a symbol definition, we first check the undefined list. Inclink allows undefined symbols as long as they are not referenced," page 6, 4.3 Relinking ; "Relocate all references from S to other symbols... Rewrite the dirty segments into the executable," page 6, 4.3 Relinking) as claimed.

Per claim 9:

The rejection of claim 5 is incorporated, and further, Quong teaches:

-d1) bringing a rearranged symbol to said symbol table; d2) rearranging a text and data sections in a host system base on a rearrangement information of an entry and an address of a target memory of a symbol in case said brought symbol is defined; and d3) adding a rearrangement information to said symbol incase said brought symbol is undefined ("Relocate all references from S to other symbols... Rewrite the dirty segments into the executable," page 6, 4.3 Relinking) as claimed.

Per claims 1-4, they are the apparatus versions of claims 5-9, respectively, and are rejected for the same reasons set forth in connection with the rejection of claims 5-9 above.

Per claim 10, it is the computer-readable recording medium version of claim 5,

respectively, and is rejected for the same reasons set forth in connection with the rejection of claim 5 above.

15.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Insun Kang whose telephone number is 571-272-3724. The examiner can normally be reached on M-F 9:30-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki can be reached on 571-272-3719. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

I. Kang
3/3/2005

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